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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BERNATZ, KEVIN M	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,371	MOTOHASHI, KAZUNARI	
	Examiner	Art Unit	
	Kevin M Bernatz	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Magnetic Recording Medium Possessing a Magnetic Layer With a Columnar Structure".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ishida et al. (U.S. Patent No. ,554,440).

Regarding claim 1, Ishida et al. disclose a magnetic recording medium (*Title*) having a magnetic layer with a thickness of 55 nm or less (*col. 14, lines 42 – 67*) formed on a major surface of an nonmagnetic support (*col. 5, lines 64 – 65 and examples*) by performing a vacuum thin film forming technique (*col. 5, lines 58 – 63*),

Regarding the limitation "wherein an angle Θ which is formed by a growth direction of magnetic particles in a columnar structure in a longitudinal cross-section of

said magnetic layer and a normal to a longitudinal direction of said nonmagnetic support satisfies the following relation: $\Theta i - \Theta f \leq 25°$ where Θi is an angle of Θ in an initial growth portion of said magnetic layer, and Θf is an angle of Θ in a final growth portion of said magnetic layer", it has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. Therefore, the *prime facie* case can be rebutted by ***evidence*** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In the instant case, while Ishida et al. does not explicitly disclose the angle of the columnar magnetic grains, but instead discloses the incident angle of the oblique deposition, one of ordinary skill in the art would readily appreciate that the angle which the magnetic grains grow at is directly proportional to the incident angle of deposition. Given that Ishida et al. provides explicit teaching that the difference in the initial and final angles should be minimized (*col. 12, lines 1 – 10*), even providing embodiments

wherein Θi = Θf (*col. 14, lines 61 – 65*), the Examiner deems that Ishida et al. provides implicit teaching of embodiments meeting applicants' claimed limitations.

Therefore, in addition to the above disclosed limitations, the presently claimed property of Θi - Θf ≤ 25° would have necessarily been present in at least the embodiments represented by the case where Ishida et al. teach using the same initial and final incident angle for deposition.

Regarding the limitation(s) "elongated", the Examiner notes that this limitation(s) are/(is a) process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is not germane to the determination of patentability of the product unless an unobvious difference can be shown to result from the claimed process limitations. In the instant case, the structure required for the limitation "elongated" is that the substrate must be a material capable of being "elongated", i.e. a polymeric substrate. Since Ishida et al. disclose polymeric substrates (*examples*), Ishida et al. is deemed to meet the process limitation "elongated" since there is no evidence that a polymeric substrate that is subject to elongation would produce an unobvious difference versus a non-elongated substrate.

Regarding the limitation "said magnetic recording medium being slid over a magnetoresistive effect magnetic head or a giant magnetoresistive effect head to reproduce a signal", the Examiner notes that this limitation is (an) intended use limitation(s) and is not further limiting in so far as the structure of the product is

concerned. Note that "in apparatus, article, and composition claims, intended use must result in a ***structural difference*** between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. ***If the prior art structure is capable of performing the intended use, then it meets the claim.*** In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art." [emphasis added] *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2111.02. In the instant case, the structure of Ishida et al. is clearly capable of being "slid over a magnetoresistive effect magnetic head or a giant magnetoresistive effect head to reproduce a signal".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. as applied above, and further in view of Kobayashi et al. (U.S. Patent No. 5,453,886).

Ishida et al. is relied upon as described above.

In the event that one of ordinary skill in the art would not have readily envisioned that the teaching of Ishida et al. would suggest the limitation $\Theta i - \Theta f \leq 25°$, the Examiner

notes that Kobayashi et al. provides explicit teaching that the average growth of the columnar grains should be within a range of 20° (*col. 9, lines 8 – 24*) and that the average angle of the columnar grains is directly dependent on the incident angle of deposition (*col. 9, lines 42 – 44*).

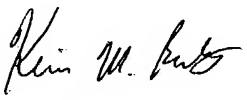
It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Ishida et al. to use a columnar magnetic layer wherein not only are the initial and final incident angles of deposition controlled to be within 10° of each other as desired by Ishida et al. (*col. 12, lines 1 – 10 and col. 14, lines 61 – 67*), but that the columnar grains possess an initial and final Θ within 10° of each other. The Examiner notes that Ishida et al.'s teaching to control the initial and final incident angles of deposition would be recognized by one of ordinary skill in the art as implicitly teaching to control the initial and final angles of the growth of the columnar grains, given that the primary function of the incident angle of deposition is to produce angled columnar grains (*Ishida et al., col. 6, lines 5 – 38 and Kobayashi et la., col. 9, lines 42 – 44*).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Bernatz, PhD.
Primary Examiner

August 10, 2004